

**METHOD AND APPARATUS FOR PROCESSING OPTICAL DUOBINARY SIGNALS**ABSTRACT OF THE DISCLOSURE

An optical receiver adapted to apply multiple-sampling processing to an optical duobinary signal received over a transmission link in an optical communication system. In one embodiment, the receiver has an optical-to-electrical signal converter coupled to a decoder adapted to process an electrical signal generated by the converter to generate a bit sequence corresponding to the optical signal. To generate a bit value, the decoder first obtains two or more bit estimate values by sampling the electrical signal within a corresponding signaling interval two or more times. The decoder then applies a logical function to the bit estimate values, which produces the corresponding bit value for the bit sequence. Advantageously, embodiments of the present invention improve overall back-to-back (i.e., source-to-destination) system performance, e.g., by reducing the number of decoding errors associated with timing jitter and/or spontaneous beat noise in the received optical signal.